

REMARKS/ARGUMENTS

This paper is submitted responsive to the official action mailed October 6, 2003. Reconsideration of the application in light of the accompanying remarks and amendment is respectfully requested.

It is noted with appreciation that in the aforesaid action, the examiner allowed claims 13-22 and indicated that claims 2-4 and 6-12 contained patentable subject matter. Claim 1 and 5 were rejected under 35 U.S.C. 102 (e) as anticipated by either of WO 00/17951 to St. Pierre, et al. (hereafter St. Pierre), and US Published Application No 2002/0040896 to Ap (hereafter Ap).

Reconsideration of the rejection of claim 1 on the basis of these two prior art reference is respectfully requested. It is noted that claim 1 calls for second feed means for feeding anti-freeze coolant to the heat exchanger for heating same and passing the heating anti-freeze coolant to the sump for heating the water in the sump. A review of the prior art references shows that these references do not disclose such subject matter.

Starting with St. Pierre, a system is disclosed which has a single loop containing both glycol and water. This loop passes through sump 174 to pump 194 through line 196 to unit 198, through the fuel cell 10, to a heat exchanger 210 and back to the sump 174. The circuit carries a mixture of water and glycol. Any heating of water which is done in this circuit is done while the water is mixed with glycol, either in heat exchanger 210 or in fuel cell 10. Thus, no heating of the water is done by heated anti-freeze, and further no heating is carried out in sump 174. Thus, St. Pierre does not disclose the second feed means as called for by claim 1 of the present application, and it is respectfully submitted that claim 1 patentably defines over St. Pierre.

It is also relevant to note that the system disclosed by St. Pierre is markedly different from that of the present invention, in that the St. Pierre device is specifically designed to always prevent any freezing of water in the circuit. The device of St. Pierre is not said to provide any useful solution to the problem of the present invention, that is, a quick start system for enabling rapid fuel cell power from sub-freezing initial conditions. Furthermore, it is respectfully submitted that the device of St. Pierre, et

al. could not function to provide a quick start under such conditions since the teaching of St. Pierre is to not allow water to freeze in the first place and, furthermore, should water freeze in sump 174, circulation through the circuit in question would be blocked and the anti-freeze could therefore not be used to melt same.

Turning to Ap, This document likewise fails to disclose a system wherein water is heated in the sump. The Examiner has pointed to units 36 and 68 as the sump or receptacle. It is noted that anti-freeze does not heat water in either of these locations. There are two circuits in the Ap reference. One circuit is circuit 30 which contains only water. The other circuit is circuit 46 which contains a mixture of water and anti-freeze. The anti-freeze/water mixture from the second circuit is used to heat flow in the first circuit at heat exchanger 34. Thus, this flow configuration does not provide a second feed means for passing heated anti-freeze to the sump to heat water in the sump. It is further respectfully noted that the device of Ap also is strikingly different from that of the present invention in that a heater 42 is positioned in sump 36 and is used to prevent water from ever freezing in this location. Thus, Ap likewise fails to disclose a quick start system for enabling rapid fuel cells power from sub-freezing initial conditions, and would appear to be likewise non functional should water freeze in sump 36 since passing of heated anti-freeze to heat exchanger 34 would serve to melt minimal, if any, ice in circuit 30.

Based upon the foregoing, it is respectfully submitted that claim1 differs structurally from the disclosures of both St. Pierre and Ap, and is therefore not anticipated by either of these references. Furthermore, it is respectfully submitted that the subject matter of claim 1 is not suggested in any way by these prior art references or any art of record.

Based upon the foregoing, allowance of claim 1 is respectfully solicited.

Dependant claim 5 had been rejected over St. Pierre, and calls for a valve in the second feed means for additional control of flow. It is respectfully submitted that this claim is patentable over St. Pierre and the other art of record on the basis of its dependancy from independent claim 1.

New dependant claims 23 and 24 have been added and are drawn to additional features of the present invention. Claim 23 sets forth that the anti-freeze coolant is fed through an anti-freeze coolant circuit which is not in fluid communication with the water. This also is strikingly different from the St. Pierre reference wherein the water and glycol are mixed in a single circuit.

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Dependant claim 24 further points out that the anti-freeze coolant circuit of the present invention is in heat exchange relationship with the sump whereby the heated anti-freeze melts ice in the sump. This, to, is markedly different from any configuration disclosed by St. Pierre or Ap.

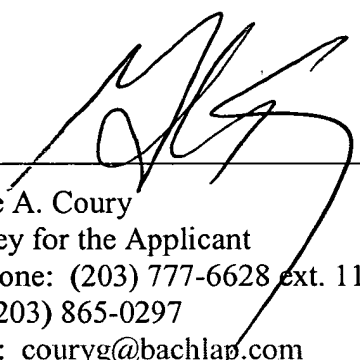
An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

A check in the amount of \$36.00 to cover the cost of extra claims is enclosed. Should any additional fee be due, the Commissioner is hereby authorized to charge said fee to deposit account no.: 02-0184.

Respectfully submitted,

By


George A. Coury
Attorney for the Applicant
Telephone: (203) 777-6628 ext. 113
Fax: (203) 865-0297
E-mail: couryg@bachlap.com

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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on January 6, 2004.


Natalie M. Pimentel